

REVISION OF *TYPOSTOLA* SIMON (ARANEAE: HETEROPODIDAE) IN AUSTRALASIA

DAVID B. HIRST

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Typostola Simon and its type *T. barbata* (L. Koch) are revised. *T. broomi* Hogg, *T. magnifica* Hogg and *T. major* Hogg are synonymised with *T. barbata*. *T. heterochroma*, *T. pilbara* and *T. tari* are described as new. □ *Araneae, Heteropodidae, Typostola, revision, new taxa.*

David B. Hirst, South Australian Museum, North Terrace, Adelaide 5000, Australia; 15 September, 1998.

Typostola Simon, 1897 was erected for *Isopeda barbata* L. Koch, 1875 which possessed a unique setal fringe on the inner edge of the chelicera. *T. broomi*, *T. magnifica* and *T. major*, were described by Hogg (1902). Järvi (1912) transferred *T. magnifica* to *Zachria* L. Koch on the basis of the female genitalia. Hirst (1991) returned *magnifica* to *Typostola*.

Hogg (1902) noted that differences between *T. broomi*, *T. magnifica* and *T. major* are minor. All are considered synonyms of *T. barbata*. The genus can be divided into two groups with *T. barbata* and *T. tari* comprising one group and *T. heterochroma* and *T. pilbara* the second, the latter having a more derived male embolus and female vulva. Although lacking a cheliceral setal fringe, all new species share with *T. barbata* the same structure in the genitalia, eye arrangement and leg indices.

METHODS

Materials and methods are as in Hirst, 1991. Types of newly described species are deposited in Australian museums. All measurements are in millimetres.

ABBREVIATIONS. *Institutions.* AM, Australian Museum, Sydney; BMNH, British Museum of Natural History, London; HNHM, Hungarian Natural History Museum; MMUS, Macleay Museum, University of Sydney; MNHP, Museum National D'Histoire, Paris; MV, Museum of Victoria, Melbourne; NHMW, Naturhistorisches Museum, Wien; NHRM, Naturhistoriske Riksmuseum, Stockholm; QM, Queensland Museum, Brisbane; SAMA, South Australian Museum, Adelaide; SMF, Natur-Museum Senckenburg, Frankfurt; ZMB, Museum Humboldt Universität, Berlin; ZMH, Zoologisches Museum,

Hamburg; WAM, Western Australian Museum, Perth.

Other Abbreviations. AL, abdomen length; AW, abdomen width; aw, anterior width; CL, carapace length; CW, carapace width; L, or l, length; MOQ, median ocular quadrangle; NSW, New South Wales; NT, Northern Territory; PNG, Papua New Guinea; pw, posterior width; Qld, Queensland; WA, Western Australia; W, or w, width. Other abbreviations are standard for the Araneae.

SYSTEMATICS

Typostola Simon, 1897

Isopeda (part) L. Koch, 1875: 680.

Typostola Simon, 1897: 44; Hogg, 1902: 423, 455; Simon, 1903: 1021; Roewer, 1954: 682; Bonnet, 1959: 4748; Hirst, 1991: 5.

Zachria (part): Järvi, 1912: 90; 1914: 218.

Type species *Isopeda barbata* L. Koch, 1875 by original designation.

DIAGNOSIS. Carapace longer than wide, low, convex. Chelicera with or without setal fringe. Sternum longer than wide. Legs I, II of females 4-5 times carapace length. Female spermathecal sacs tubular, long, looped to anterior. Palpal tibial apophysis of known males relatively short with robust membraneous support, embolus coiled 1¾-3½ times in distal half of cymbium; median apophysis convex, subcontiguous or contiguous with base of conductor.

DESCRIPTION. Large spiders. Carapace longer than wide, low, 3-4 times longer than high, convex, gently rounded sides, flattish medially, highest anterior of fovea (Fig. 1A); fovea a discernible shallow groove; surrounding area not depressed. ALE usually largest, sometimes AME largest; distance between AME equal to or

greater than between AME-ALE; anterior row, from above, slightly procurved, posterior row slightly recurved. Chelieerac with 2 promarginal teeth; usually 5 retromarginal teeth, occasionally 4 or 6 on one chelicera, rarely on both, distal teeth subequal (Fig. 3C) occasionally distal tooth largest (Fig. 4F); plumose setae present as dense setal fringe on prodorsal face of chelicera (Fig. 1B) or absent. Maxillae with or without dense long plumose setae retrolaterally. Palpal trochanter, femora and tarsi may have plumose setae ventrally. Labium wider than long. Sternum longer than wide, widest mid-length; may have dense white or yellow setae on margins. Legs relatively long, legs I, II of females 4-5 times length of carapace, of males 5 to >6 times. Leg I when outstretched alongside leg II reaches to or near base of tarsi II, never beyond. Abdomen longer than wide, rounded, without pattern, but may have median spots or posterior chevrons (Fig. 4D), venter without pattern or with dark stripes (Fig. 3E) or brown badge (Fig. 4E). Palpal tibial apophysis of known males relatively short and thick with robust membranous support, embolus coiled $1\frac{1}{4}$ - $3\frac{1}{2}$ times alongside lesser coiled conductor in distal half of cymbium; median apophysis convex, rounded and subcontiguous or narrow and contiguous with conductor. Female epigynum large, occupying $\frac{3}{5}$ distance between epigastric furrow and pedicel; width of sclerotisation lateral to fossa equals width of fossa, outer margin of sclerotisation defined; fossa deeply reecessed anteriorly, whitish, but posterior margin pigmented. Spermathecal sacs tubular, long, curved and reaching to beyond anterior of insemination ducts (Figs 4B, 5A) occasionally further recurved to follow insemination ducts (Fig. 1E).

REMARKS. Male *Typostola* have a low embolic coil number compared with the insemination duct coil number of the female where both sexes are known. However, it shares this character with *Eodelena* Hogg and *Zachria* the only other Deleninae genera so far revised in which the female has a greater number of coils. *Typostola* is most similar to *Zachria* from which it is separated by having relatively longer legs, convex carapace and the short thick male palpal tibial apophysis. The male palp of *Typostola* also resembles that of *Eodelena* but the latter has an acuminate or obtuse apex on the median apophysis (Hirst, 1991) while female *Eodelena* lack spermathecal sacs. Although similar in leg indices, *Eodelena* further differs in having a low flattish, wider than long carapace. Unlike *Zachria* and *Eodelena* which

are medium to small heteropodids having a southern Australian distribution, *Typostola* are large and found in northern Australia and New Guinea. Little is known of their habits but personal observations indicate they may prefer to frequent the upper trunk or branches of trees.

KEY TO SPECIES OF *TYPOSTOLA* SIMON

FEMALES

1. Chelicera without setal fringe on inner edge; insemination ducts with $4\frac{1}{4}$ - $4\frac{1}{2}$ coils; spermathecal sacs reach to anterior of fossa (Figs 4B, 5A) not recurved 2
Chelicera with setal fringe on inner edge; insemination ducts with $2\frac{1}{2}$ coils; spermathecal sacs further recurved to follow fertilisation ducts (Fig. 1E) *T. barbata* (L. Koch)
2. Fossa lacks cavities anteriorly (Fig. 4A); dorsal abdomen with posterior chevron markings, venter brown *P. heterochroma*, sp. nov.
Fossa with pair of cavities anteriorly (Fig. 5A); abdomen without pattern *T. pilbara*, sp. nov.

MALES

1. Chelicera without setal fringe on inner edge 2
Chelicera with setal fringe on inner edge *T. barbata* (L. Koch)
2. Abdomen without dorsal pattern; median apophysis oval (Fig. 3D); embolus with 2 coils *T. tari*, sp. nov.
Abdomen with dorsal pattern (Fig. 4D); median apophysis elongate (Fig. 4I); embolus with $3\frac{1}{2}$ coils *T. heterochroma*, sp. nov.

Typostola barbata (L. Koch) (Figs 1,6; Table 1)

Isopoda barbata L. Koch, 1875: 680, plate 56, fig. 3.

Typostola barbata: Simon, 1897: 44.

Typostola broomi Hogg, 1902: 455, fig. 100. New synonymy.

Typostola magnifica Hogg, 1902: 457, fig. 101; Hirst, 1991:5, New synonymy.

Typostola major Hogg, 1902: 459. New synonymy.

Zachria magnifica: Järvi, 1912: 90, pl. 9, figs 9, 10.

MATERIAL. SYNTYPES: The series from Port Mackay and Sydney contains at least two specimens one of which was a female. Whereabouts of syntypes unknown. **OTHER MATERIAL.** New South Wales: SAMAN1994208, F, Warialda, 29°32'S 150°35'E. Queensland: BMNH 1898.11.7.3 Holotype male of *Typostola broomi*, Muldiva, 17°13'S 144°29'E; BMNH1898.11.7.4, syntype female of *Typostola magnifica*; BMNH1893.3.23.1, holotype F of *Typostola major*, Queensland; QMS21690, M, Allingham Creek, 19°45'S 145°41'E; QMS14136, F, Alton, 27°55'S 149°43'E; QMW229, F, Auchenflower, Brisbane, 27°28'S 153°01'E; QMS21681, F, Bald Hills, Brisbane; QMS6910, F, Beaudesert, 27°59'S 153°00'E; QMS21696, F, Boobyjan, 25°57'S 151°55'E; QMS21694, F, Bracken Ridge, Brisbane; QMS21691, juv., Brookfield, Brisbane; QMS14135, F, Callide Power Stn, Biloela, 24°24'S

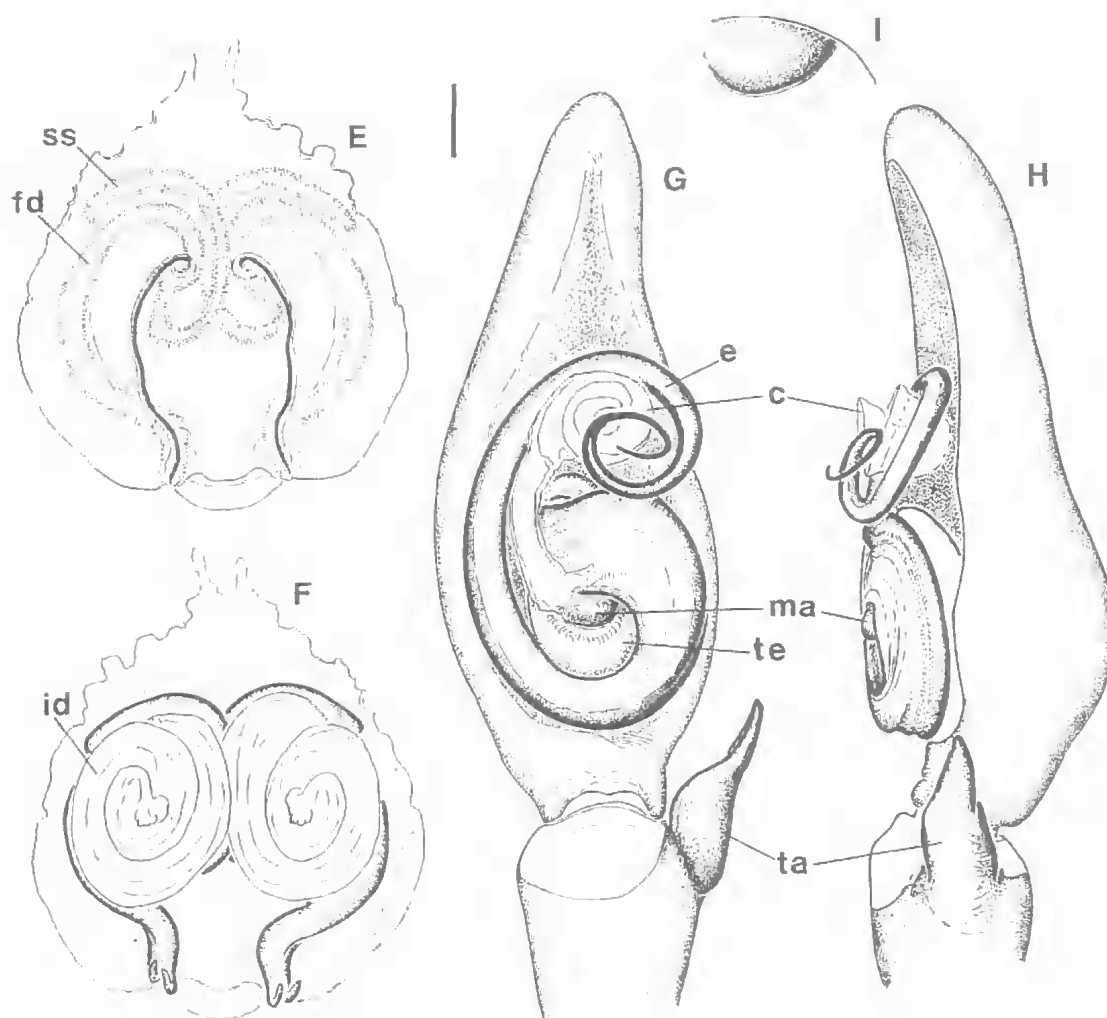


FIG. 1. *Typostola barbata* (L. Koch). A-E, F, A, carapace, lateral; B, chelicerae and ocular area; C, epigynum of holotype *T. magnifica*; D, ditto of *T. major*; E, F, epigynum of SAMAN1994208, E, ventral, cleared; F, dorsal. G-I, male. G, H, left palp of holotype *T. broomi*, G, ventral, H, retrolateral; I, median apophysis of QMS21677. Scale bars; A, B, 1mm, C-H, 0.5mm, I, not to scale. c = conductor; e = embolus; fd = fertilisation duct; id = insemination duct; ma = median apophysis; ss = spermathecal sac; ta = tibial apophysis; te = tegulum.

150°31'E; QMS21671, F, Caloundra, 26°48'S 153°08'E; QMS21688, juv., Camira, Brisbane; QMS21685, penult. F, Camp Hill, Brisbane; QMS21689, juv., Camarvon Lodge, 24°50'S 147°45'E; QMS14141, F, Chinchilla, 26°44'S 150°38'E; QMS17683, F, Coominya, 27°24'S 152°30'E; QMS21678, F, Cooparoo, Brisbane; QMW533, F, Corinda, Brisbane; QMD10700, F, Eidsvold, 25°22'S 151°07'E; QMW1629, F, juv., Enasleigh, 18°31'S 144°05'E; W1147, W1148, penult. F, juv., Enoggera, Brisbane; QMS21692, M, Fortitude Valley, Brisbane; QMS21667, F, Gatton, 27°34'S 152°17'E; QMS21684, penult. F, Goodna, Brisbane; QMS21673, S21687, 2 juv., Goondiwindi, 28°33'S 150°18'E; QMS14137, F, Jandowae, 26°47'S

151°07'E; QMS21693, M, 1.k Broadwater, 27°21'S 151°06'E; QMS21697, F, Leichardt, 23°03'S 144°54'E; QMS14139, F, Moonie, 27°43'S 150°22'E; QMS21670, M, Mt Gravatt, Brisbane; QMS14140, F, Mt Isa, 20°44'S 139°29'E; QMS14465, juv., Mt Moffat, 25°01'S 147°57'E; QMS21676, F, Mt Molloy, 16°41'S 145°20'E; QMW496, F, M. Mt Pleasant, 27°09'S 152°46'E; QMS21675, F, Nangram Lagoon, 26°50'S 150°17'E; QMS21695, F, Narangba, 27°12'S 152°58'E; QMS21677, M, New Farm, Brisbane; QMS14138, F, Rockhampton, 23°22'S 150°32'E; MNHP No. 1688, F, same locality; QMS21674, S21682, 2M, Rosewood, Brisbane; QMS21686, W148, 2 F, Samford, Brisbane; QMS21680, F, St Lucia, Brisbane;

QMS21672, F, Thomlands, Brisbane; QMS21683, juv., Toogoolawah, 27°05'S 152°23'E; QMS21679, F, Victoria Barracks, Brisbane; QMS21668, QMS21669, 2 F, no data; SAMAN1994209, F, no data.

DIAGNOSIS. Colour yellow-brown. ALE largest. Dense plumose setae on inner edge of chelicera, retrolateral maxillae, and ventrally on palpal trochanter, femora and tarsi. Male palpal tibial apophysis relatively short, blunt; median apophysis small; embolus with 1¼-2 coils apically. Female spermathecal sacs long, arced anteriorly then recurved to posterior adjacent each fertilisation duct; insemination ducts with 2½ lightly sclerotised coils.

DESCRIPTION. Female (holotype *T. major*): CL 15.8, CW 14.5, AL 17.8, AW 12.5.

Colour in alcohol. As in Hogg (1902); carapace red-brown, caput dark brown in ocular area. Upright setae yellow-brown, adpressed setae yellow-white. Chelicerae black-brown. Maxillae and labium red-brown. Sternum orange-brown. Coxae I orange-brown, dense yellow setae. Legs red-brown. Abdomen brown with pair of median black spots.

Eyes. AME 0.84. AME:ALE:PME:PLE 1: 1.21: 0.88: 1.21. Interspaces; AME-AME 0.48, AME-ALE 0.39, PME-PME 1.07, PME-PLE 1.79, AME-PME 0.88, ALE-PLE 1.38. MOQ, aw; pw: 1 2.50:2.79:2.62. Width of clypeus to AME 0.77.

Labium. L 2.7, W 2.9. Sternum: L 4.7, W 6.0.

Legs. (Table 1) Anterior leg indices; I 4.3, II 4.7.

Spination. Leg I; fe d101 p100 r111, pa p010 r010, ti d101 p101 r101 v222, mt p110 r110 v220, leg II; fe d101 p111 r111, pa p010 r010, ti d001 p101 r101 v222, mt p110 r110 v220, leg III; fe d101 p111 r101, pa p010 r010, ti p101 r101 v222, mt p110 r110 v220, leg IV; fe d101 p111 r001, pa p010, ti p101 r001 v222, mt p112 r112 v220, palp; fe 001 + 4 apically, pa p010 r010, ti d100 p111 r110, ta p111 r110.

Epigynum. Lateral rims somewhat parallel (Fig. 1D); fossa white. Vulva; spermathecal sacs long, arced anteriorly beyond insemination ducts then recurved (Fig. 1E), insemination ducts with 2½ coils (Fig. 1F).

Male (holotype *T. broomi*): CL 9.7, CW 8.8, AL 10.9, AW 8.0.

Colour in alcohol. As in Hogg (1902); differs from the female in the reddish chelicerae and maxillae and labium being orange-red.

Eyes. AME 0.78. AME:ALE:PME:PLE 1: 0.97: 0.77:1.03. Interspaces; AME-AME 0.18, AME-

TABLE 1. Leg measurements of *T. barbata* (L. Koch), for F holotype *T. major* and male holotype *T. broomi* in parentheses.

	Leg 1	Leg 2	Leg 3	Leg 4	Palp
Femur	18.20 (14.85)	20.50 (16.85)	15.50 (12.10)	16.40 (9.70)	6.70 (4.50)
Patella	8.40 (5.59)	8.60 (6.10)	6.50 (4.50)	6.30 (2.30)	3.20 (1.90)
Tibia	17.90 (15.40)	20.20 (17.21)	13.20 (11.25)	13.90 (9.20)	4.70 (3.20)
Metatarsus	18.70 (16.20)	19.90 (17.20)	12.80 (11.25)	15.20 (8.70)	- -
Tarsus	4.50 (3.81)	4.50 (4.05)	3.60(3.0 0)	4.00 (2.95)	6.80 (4.70)
Total	67.70 (55.85)	73.70 (61.40)	51.60 (42.10)	55.80 (32.85)	21.40 (14.30)

ALE 0.10, PME-PME 0.72, PME-PLE 1.03, AME-PME 0.54, ALE-PLE 0.77. MOQ, aw; pw: 1 2:2.18:2.21. Width of clypeus to AME 0.46.

Labium. L 1.76, W 1.64. Sternum: L 5.21, W 4.40.

Legs. (Table 1) Anterior leg indices; I 5.8, II 6.3.

Spination. As female but; leg I; fe d001 p001, leg II; ti d101, palp; ti r010, ta 0.

Palps. Median apophysis small, apex subcontiguous with conductor (Fig. 1I); embolus with 1¼ coils (Fig. 1G,H).

VARIATION. Carapace length of males; 7.76-13.16, mean 11.39 (n=6). Embolus with 1¼-2 coils. Carapace length of females; 13.20-18.25, mean 16.18 (n=34). Occasionally the fossa is narrow as in the syntype of *T. magnifica* (Fig 2C). Width of fossa divided by length of fossa of 34 females gave a range of 0.8- 1.27, the majority between 0.85 and 1.05 (Fig. 2).

DISTRIBUTION. Queensland, predominantly on the western side of the Great Dividing Range from Mt Isa eastwards to Allingham Creek (W of Townsville) southwards to NE NSW (Fig. 6).

REMARKS. Syntype material of *Isopeda barbata*, from Mackay, Qld and Sydney, NSW has not been found. The Mackay material was part of the Godceffroy Collection of which some was lodged in ZM11. ZMH holds only one specimen from Bowen and one from Rockhampton (neither examined) while the syntype whereabouts is unknown, but H. Dastych (pers. comm.) considers it improbable it was sold to any other museum. Further, part of that material from ZMH was lost during WW II. The syntype is not in other museums to which material was sold or

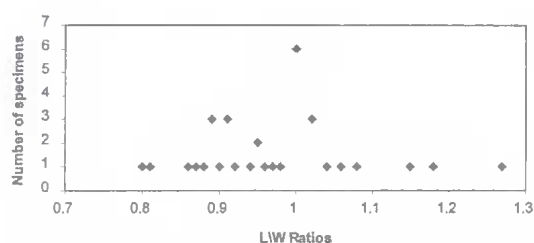


FIG. 2. *Typostola barbata* epigynal L/W ratios.

likely to have been deposited (BMNH, HHNM, MNHP, NHMW, NHRM, NM, SMNS, or ZMB), but BMNH has a male and a juvenile from Port Mackay and MNHP a male from Rockhampton (examined) both of which are from later collections. Material from Sydney was lodged in the Bradley Collection (MMUS) some of which is held by AM. This material has not been found in those collections nor in the collections of other Australian Museums. L. Koch (1875; pl. 56, fig. 3) figured the epigynum of *T. barbata* in which the posterior corners of the lateral rims are shown to almost converge. This is an unusual situation in the Deleninae and is considered to be an error. Measurements taken from the drawing give a value of 0.88, within the range given under Variation above. Koch has also illustrated the palp femora as proportionally longer than usual with the total length of the palp being greater than given in the text. This is considered a deliberate error to better illustrate the dense setae present retroventrally, said by Koch to be 'unten', but appearing as proventral in his illustration. As all material examined agrees otherwise with the original description, designation of a neotype is considered unnecessary. *T. barbata* differs from all other species in possessing plumose setae on the chelicerae, maxillae, and palpal trochanter, femora and tarsi.

Typostola tari sp. nov.
(Figs 3,6; Table 2)

ETYMOLOGY. For the type locality, Tari, PNG.

MATERIAL. HOLOTYPE: MVK-4104, M, Tari, 5°52'S 142°58'E, PNG, Nov-Dec 1977, A.J. Coventry.

DIAGNOSIS. Male. AME largest. Colour dark red-brown with brown-black stripes ventrally on the abdomen; sternum with dense adpressed yellow setae medially. Tibial apophysis short, broad. Median apophysis oval, large; embolus with 2 coils. Female unknown.

DESCRIPTION. Male (holotype): CL 13.48, CW 11.77, AL 13.75, AW 9.30.

Colour in alcohol. Carapace red-brown, caput darker, ocular area with yellow setae mainly around PME. Chelicerae dark red-brown, long yellow setae. Maxillae and labium black-brown, anterior margins reddish. Sternum red-brown, dense yellow recumbent setae except on margins, long upright brown setae. Coxae red-brown with brown suffusion. Legs red-brown, long grey and yellow-brown setae. Abdomen with dense yellow, brown and white setae; venter yellow with brown-black stripes (Fig. 3E), anterior of epigastric furrow black-brown but lung-books green.

Eyes. AME 1.01, AME:ALE:PME:PLE 1:0.97:0.69:0.81. Interspaces; AME-AME 0.30, AME-ALE 0.22, PME-PME 1.00, PME-PLE 1.15, AME-PME 0.73, ALE-PLE 0.74. MOQ, aw: pw: 1.230:2.39:2.38. Width of clypeus to AME 0.61.

Labium. L 1.32, W 1.46. Sternum: L 6.51, W 5.48.

Legs. (Table 2) Anterior leg indices; I 5.3, II 5.5.

Spination. As *F. T. barbata* but leg I; fe p111, leg II-IV; pa p0, palp; ti r010, ta 0.

TABLE 2. Leg measurements of *T. tari* sp. nov., for holotype male.

	Leg 1	Leg 2	Leg 3	Leg 4	Palp
Femur	18.81	20.69	15.71	16.90	5.68
Patella	7.62	7.80	6.28	5.79	2.69
Tibia	19.80	20.69	14.56	15.12	3.51
Metatarsus	20.14	20.70	13.95	16.68	-
Tarsus	4.65	4.72	3.93	4.66	5.73
Total	71.02	74.60	54.43	\$9.15	17.61

Palps. Median apophysis oval (Fig. 3D), apex subcontiguous with conductor; embolus with 2 coils (Fig. 3A,B).

Female. Unknown.

DISTRIBUTION. *T. tari* is known only from the type locality, Tari, PNG (Fig. 6).

REMARKS. The male of *T. tari* is similar to *T. barbata*, but differs in being darker in colour, in the venter pattern, in lacking plumose setae and in having a short, broad tibial apophysis and larger median apophysis. The female is unknown.

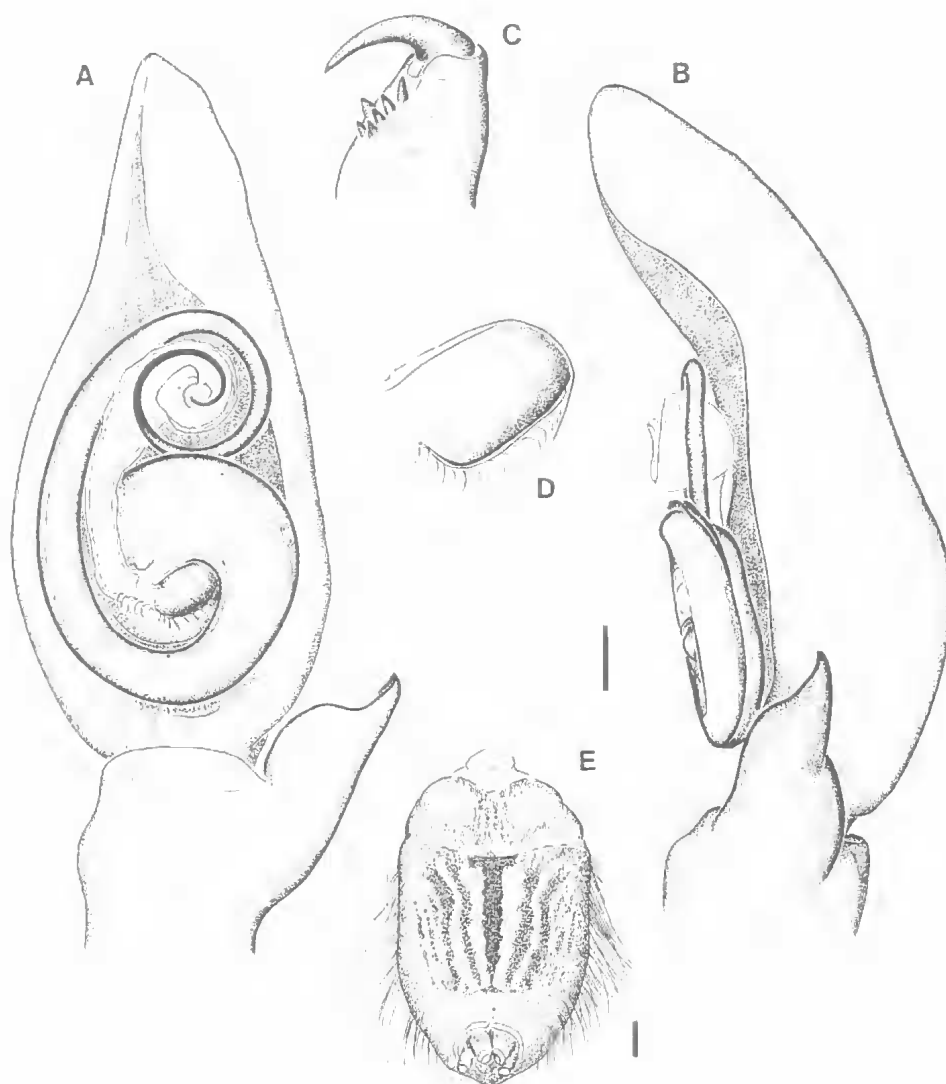


FIG. 3. *Typostola turi* sp. nov. male holotype. A, B, left palp; A, ventral, B, retrolateral; C, chelicera, left, ventral; D, median apophysis; E, abdomen, venter. Scale bars; A, B = 0.5mm, C, E = 1mm, D, not to scale.

***Typostola heterochroma* sp. nov.**
(Figs 4, 6; Table 3)

ETYMOLOGY. For the varied colour of this species, *hetero*, Greek = different and *chroma*, Greek = colour.

MATERIAL. HOLOTYPE: AMKS16546, F, Moonpah S.F., nr Dorrigo, 30°18'S 152°40'E, New South Wales, Mar 1986, M. Sawtell. ALLOTYPE: QMS35387, M, Cunninghams Gap (Main Range Natl Park), 28°03'S 152°24'E, Qld, 20.ii.1971, B. Baldwin.

DIAGNOSIS. Colour yellow-red. ALE largest; lateral eyes on low mound. Chelicera setose without beard; distal retromarginal tooth largest. Male

palpal tibial apophysis relatively short, blunt; median apophysis elongate; embolus with 3½ coils apically. Female spermathecal sacs long, arced to anterior; insemination ducts with 4¼ lightly sclerotised coils.

DESCRIPTION. Female (holotype): CL 13.65, CW 12.98, AL 19.10, AW 14.65.

Colour in alcohol. Carapace red-brown, brown suffusion, sparse brown setae, yellow-white adpressed setae in ocular area. Chelicerae dark red-brown. Maxillae and labium black, reddish towards anterior margins. Sternum orange-red,

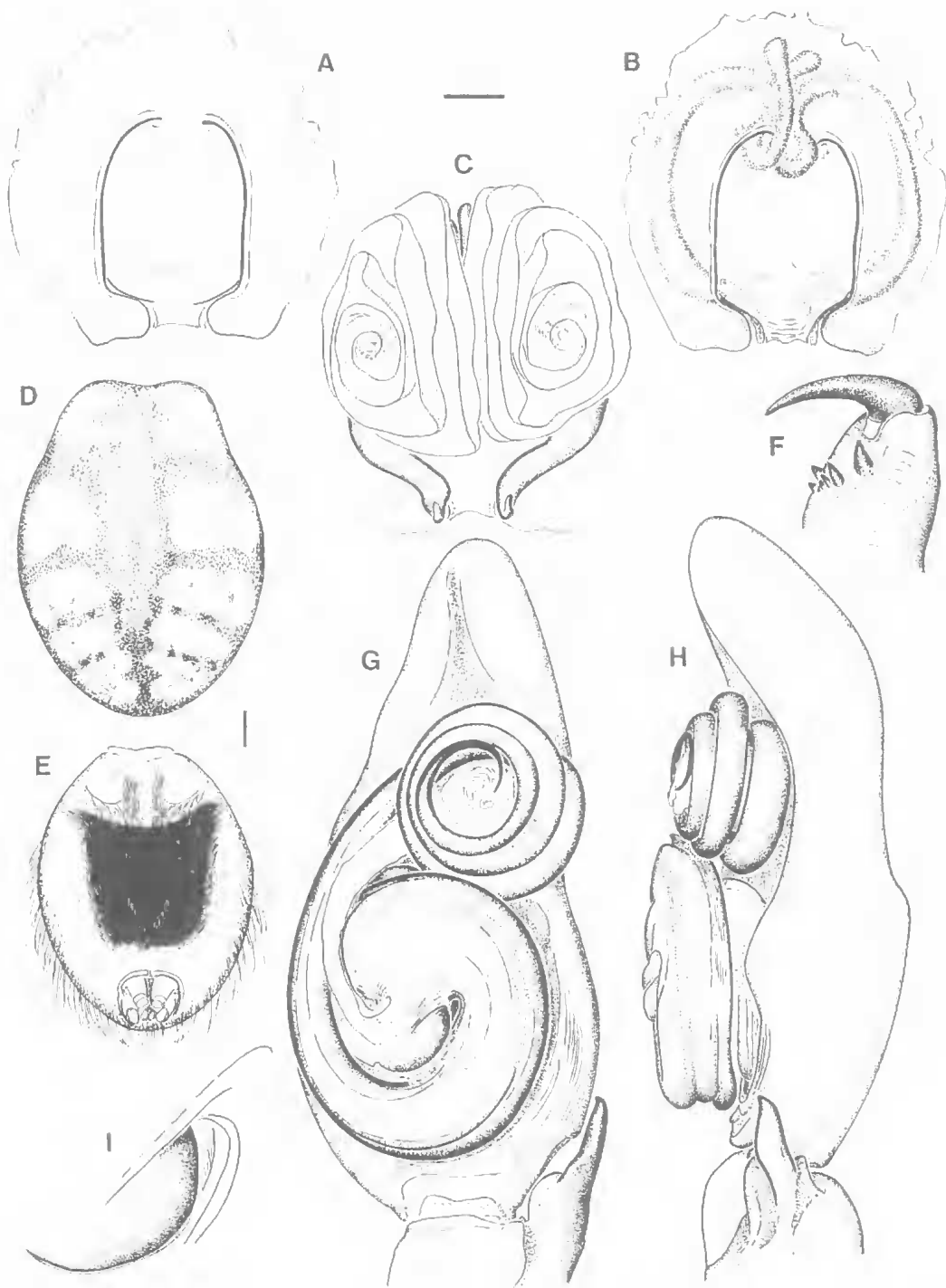


FIG. 4. *T. heterochroma* sp. nov. A-D, female holotype. A, epigynum; B, epigynum cleared, ventral; C, vulva, dorsal; D, abdomen, dorsal; E-I, male allotype. E, abdomen, ventral; F, chelicera, left, ventral; G, H, left palp, G, ventral, H, retrolateral; I, median apophysis. Scale bars: A-C, G, H = 0.5mm, D-F = 1mm, I, not to scale.

TABLE 3. Leg measurements of *T. heterochroma* sp. nov., for holotype female and allotype male in parenthesis.

	Leg 1	Leg 2	Leg 3	Leg 4	Palp
Femur	14.68 (16.26)	16.67 (18.47)	12.41 (13.31)	12.73 (14.34)	5.52 (5.19)
Patella	7.37 (7.14)	7.49 (7.59)	5.56 (5.48)	5.07 (4.97)	2.68 (2.12)
Tibia	13.49 (16.29)	15.65 (19.66)	9.97 (12.64)	10.80 (12.53)	3.51 (2.92)
Metatarsus	13.99 (16.68)	15.48 (18.31)	9.24 (10.75)	11.37 (13.12)	--
Tarsus	3.63 (4.07)	3.70 (4.16)	2.05 (3.20)	3.20 (3.50)	5.65 (4.41)
Total	63.16 (60.44)	58.99 (68.19)	39.23 (35.38)	43.17 (48.46)	17.36 (14.64)

long yellow-white setae. Legs red-brown, yellow-brown setae. Abdomen cream-yellow, indistinct folium and posterior chevrons (Fig. 4D), long dense yellow-brown setae, laterals cream-yellow; venter with large brown badge covered with yellow-brown setae.

Eyes. AME 0.77. AME:ALE:PME:PLE 1: 1.13: 0.73: 1.03. Interspaces; AME-AME 0.53, AME-ALE 0.55, PME-PME 1.61, PME-PLE 1.84, AME-PME 0.97, ALE-PLE 1.12. MOQ, aw: pw: 1 2.53:3.06:2.73. Width of clypeus to AME 0.73.

Labium. L 2.32, W 2.88. Sternum: L 6.48, W 5.77.

Legs. (Table 3) Anterior leg indices; I 3.9, II 4.3.

Spination. As in male *T. barbata* but leg I; fe p110.

Epigynum. Lateral rims somewhat parallel (Fig. 4A); anterior of fossa recessed. Vulva with spermathecal sacs extending just anterior of fertilisation ducts (Fig. 4B), insemination ducts lightly sclerotised and with $4\frac{1}{4}$ coils (Fig. 4C).

Male (allotype): CL 12.47, CW 11.18, AL 12.70, AW 8.60.

Colour in alcohol. As female except as follows; carapace yellowish on laterals, caput darker red-brown, fovea reddish. Leg femora, patellae and tibiae red dorsally, yellow ventrally; metatarsi and tarsi dark orange-brown. Venter abdomen (Fig. 4E).

Eyes. AME 0.75. AME:ALE:PME:PLE 1: 1.12: 0.79: 1.01. Interspaces; AME-AME 0.51, AME-ALE 0.41, PME-PME 1.35, PME-PLE 1.49, AME-PME 0.89, ALE-PLE 0.97. MOQ, aw: pw: 1 2.51:2.93:2.69. Width of clypeus to AME 0.77.

Labium. L 2.16, W 2.49. Sternum: L 6.13, W 5.31.

Legs. (Table 3) Anterior leg indices; I 4.9, II 5.5.

Spination. As female but leg II; ti d001; palp; pa p0, tarsus 0.

Palps. Median apophysis elongate (Fig. 4I), apex contiguous with conductor; embolus with $3\frac{1}{2}$ coils (Fig. 4G,H).

DISTRIBUTION. Known only from near Dorrigo on the E side of the Great Dividing Range in northern NSW and Cunninghams Gap from central Great Dividing Range in SE Qld (Fig. 6).

REMARKS. *T. heterochroma* differs from all other species in having the distal retromarginal tooth largest. It further differs from *T. barbata* in lacking plumose setae and in having $3\frac{1}{2}$ male embolic coils and $4\frac{1}{2}$ female insemination duct coils. It is most similar to *T. pilbara* in female insemination duct coils but differs in the venter pattern and fossa shape.

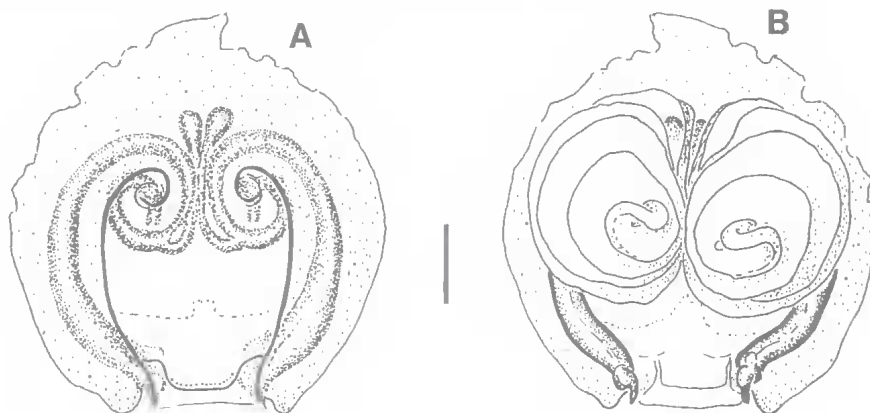


FIG. 5. *T. pilbara* sp. nov. F holotype. A, epigynum ventral, cleared; B, vulva, dorsal Scale bar = 0.5mm.



FIG. 6. Distribution of *T. spp.* *T. barbata* (L. Koch) ●; *T. heterochroma*, sp. nov. ▼; *T. pilbara*, sp. nov. ◆; *T. tari*, sp. nov. ■.

***Typostola pilbara* sp. nov.**
(Figs 5,6; Table 4)

ETYMOLOGY. In apposition to the Pilbara region in which Marble Bar lies.

MATERIAL. HOLOTYPE: WAM88/870, F, Coppin Gap, Marble Bar, 20°53'S 120°07'E, Western Australia, 13.i.1970, M. deGraaf. PARATYPE: WAM14/850, F, Marble Bar, 21°10'S 119°44'E, Western Australia, 7.vii.1914, Dr Thorp.

DIAGNOSIS. Female. ALE largest. Colour yellow-brown. Female epigynum with insemination duct

openings in fossa anteriorly, insemination ducts with 4½ coils, vulva with anteriorly curved spermathecal sacs extending to anterior of insemination ducts. Male unknown.

DESCRIPTION. Female (holotype): CL 12.26, CW 10.39, AL 11.95, AW 8.30.

Colour in alcohol. Carapace yellow-brown, red-brown suffusion, fovea reddish, ocular area red-brown. Upright brown setae, adpressed long fine yellow-white setae. Chelicerae red-brown. Maxillae and labium orange-brown. Sternum yellow-orange, dense white setae on margins.

TABLE 4. Leg measurements of *T. pilbara* sp. nov., holotype female.

	Leg 1	Leg 2	Leg 3	Leg 4	Palp
Femur	15.93	17.29	14.20	16.12	4.65
Patella	6.71	6.88	5.58	5.47	2.48
Tibia	15.48	16.33	12.19	13.69	3.70
Metatarsus	16.82	18.16	12.04	15.69	-
Tarsus	3.74	3.80	3.17	3.31	5.30
Total	58.68	62.46	47.18	54.28	16.13

Coxae I with dense yellow setae prolaterally. Legs yellow-brown, darker around bases of heavier setae. Abdomen yellow-brown, dense yellow, white and brown setae; venter yellow, yellowish setae.

Eyes. AME 0.66, AME:ALE:PME:PLE 1:1.18:0.85:0.97. Interspaces; AME-AME 0.53, AME-ALE 0.15, PME-PME 1.15, PME-PLE 1.30, AME-PME 1.12, ALE-PLE 0.89. MOQ, aw: pw: l 2.53:2.85:3.06. Width of clypeus to AME 0.57.

Labium. L 1.94, W 2.26. Sternum: L 5.58, W 4.93.

Legs. (Table 4) Anterior leg indices; I 4.8, II 5.1.

Spinination. As in female *T. barbata* but Leg I; fe p III, leg II, ti d101, leg III; fe r III ti d101, leg IV; ti d101.

Epigynum. (Fig. 5A,B) Insemination ducts with 4½ coils.

Male. Unknown.

VARIATION. Paratype female with carapace length of 10.58.

DISTRIBUTION. *T. pilbara* is known only from the Marble Bar area in WA (Fig. 6).

REMARKS. *T. pilbara* is similar to *T. heterochroma* but differs in the comparatively uniform colour pattern and in possessing small insemination duct openings in the anterior of the fossa.

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